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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/667,009

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Neil Gilmartin

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AT&T Legal Department

Attn: Patent Docketing

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EXAMINER

HOANG, HIEU T

ART UNIT

PAPER NUMBER

2452

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/667,009

Applicant(s)

GILMARTIN ET AL.

Examiner

HIEU T. HOANG

Art Unit

2452

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 16-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 21-29 is/are allowed.
- 6) ☒ Claim(s) 1-10, 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/10/2008 has been entered.
2. Claims 12-15 are cancelled.
3. Claims 21-29 are new.
4. Claims 1-11, 16-29 are pending.

Allowable Subject Matter

5. Claims 11 and 21-29 are allowed.

Response to Arguments

6. Applicant's arguments have been fully considered but they are not persuasive. In the only main argument of the Remarks, applicant argues that the prior art does not teach "splitting said VLAN into two portions based on the location of said VLAN switches relative to said target trunk, wherein one portion includes said target access port and is an access port side and the other portion is a non-access port side and calculating bandwidth contribution for the access port side and the non-access port side". Given the broadest reasonable interpretation, this limitation means considering

separately access port side of the trunk and non access port side of the trunk when calculating the bandwidth contribution or bandwidth effect of adding the access port to the VLAN. It is maintained that the prior art does disclose splitting said VLAN into two portions based on the location of said VLAN switches relative to said target trunk, wherein one portion includes said target access port and is an access port side and the other portion is a non-access port side (see Ngo, fig 5, [0082]-[0084], VLAN access port on the access side 104 and VLAN trunk 208 on the core side or non-access port side are considered separately). And “calculating bandwidth contribution for the access port side and the non-access port side” is disclosed by Balakrishnan ([0080], [0082], fig. 3 and 4, a particular port bandwidth has to be limited by flow min and max bandwidth or access port side bandwidth, aggregated bandwidth or trunk bandwidth or non-access port side bandwidth has to be limited by trunk min and max bandwidth, also there are class of service (priority) considerations involved in the calculation of the effect—transmit probability—of the particular flow or port). The transmit probability of the particular flow is based on the result of the bandwidth test ([0082], [0090]); and is read as bandwidth contribution of the particular flow or target access port.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-10, 16-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims recite “calculating bandwidth contribution *for the access port side and the non-access port side*” in the last limitation. There is no support for this limitation found in the specification. Since the specification only recites calculating bandwidth contribution of an target access port to a VLAN (see e.g., [0005] of the specification)

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-10, 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps, and therefore being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. See MPEP § 2172.01. The omitted steps are: missing functional relationship between “calculating bandwidth contribution for the access port side and the non-access port side” and the steps of splitting the VLAN into two separate portions. How does splitting the VLAN into two separate portions affect the claimed bandwidth contribution (leave alone bandwidth contribution for the access port side and non-access port side)?

11. Appropriate correction is required.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-10 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ngo et al. (US 2004/0042416, hereafter Ngo) and further in view of Balakrishnan et al. (US 2004/0196790, hereafter Balakrishnan).

14. For claim 1, Ngo discloses a method for providing Ethernet VLAN capacity requirement estimation, said method comprising:

receiving a VLAN including VLAN access ports (fig. 2, access ports 104), VLAN switches (fig. 2, switches 106) and VLAN trunks (fig. 2, trunk links 208),

splitting said VLAN into two portions based on the location of said VLAN switches relative to said target trunk, wherein one portion includes said target access port and is an access port side and the other portion is a non-access port side (fig 5, [0082]-[0084],

VLAN access port on the access side 104 and VLAN trunk 208 on the core side or non-access port side are considered separately)

Ngo does not explicitly disclose:

wherein said VLAN access ports include VLAN bandwidth requirements and VLAN class of service and said VLAN trunks include VLAN capacity counters and VLAN threshold parameters, receiving a target access port, said target access port including a target class of service and a target bandwidth requirement from a requestor; determining a target trunk and target switch corresponding to said target access port, wherein said target trunk corresponds to one of said VLAN trunks and said target switch corresponds to one of said VLAN switches; calculating a bandwidth contribution of said target access port to said VLAN, said calculating responsive to said VLAN trunks, said VLAN switches, said VLAN access ports, and said target access port; and transmitting said bandwidth contribution to said requestor;

wherein said calculating the bandwidth contribution of said target access port to said VLAN includes calculating bandwidth contribution for the access port side and the non-access port side.

However, Balakrishnan discloses:

wherein said VLAN access ports include VLAN bandwidth requirements and VLAN class of service (fig. 3, page 6, table in example 1, priority of each VLAN, min, max) and said VLAN trunks include VLAN capacity counters and VLAN threshold

parameters ([0081] line 14-15, aggregate transmitted rate is the current capacity and aggregate j is the maximum threshold of the trunk),

receiving a target access port, said target access port including a target class of service and a target bandwidth requirement from a requestor ([0080] lines 16-22, a port has an associated flow which has a priority (class of service) and min and max rate requirement);

determining a target trunk and target switch corresponding to said target access port, wherein said target trunk corresponds to one of said VLAN trunks and said target switch corresponds to one of said VLAN switches (fig. 3, target trunk is 311 and target port is the one associates with the flow);

calculating a bandwidth contribution of said target access port to said VLAN, said calculating responsive to said VLAN trunks, said VLAN switches, said VLAN access ports, and said target access port (fig. 4, [0080], [0082], [0090], calculate a particular flow bandwidth effect and transmit probability based on the stability requirement (min and max rate requirement) of the access port and aggregate link or trunk, based on current transmitted flow bandwidth); and

transmitting said bandwidth contribution to said requestor ([0080], [0082], transmit probability is calculated),

wherein said calculating the bandwidth contribution of said target access port to said VLAN includes calculating bandwidth contribution for the access port side and the non-access port side ([0080], [0082], fig. 3 and 4, a particular port bandwidth has to be

limited by flow min and max bandwidth or access port side bandwidth, aggregated bandwidth or trunk bandwidth or non-access port side bandwidth has to be limited by trunk min and max bandwidth, also there are class of service (priority) considerations involved in the calculation of the effect—transmit probability—of the particular flow or port). The transmit probability of the particular flow is based on the result of a bandwidth test including of port bandwidth and trunk bandwidth, [0082], [0090]; and is read as bandwidth contribution of the particular flow or target access port)

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Ngo and Balakrishnan to control VLAN network flow rates as disclosed by Balakrishnan to ensure that access port bandwidth of any particular access port is sufficiently supported by the trunk, and therefore, to allow management and monitoring of port and trunk bandwidth efficiently.

15. For claim 2, the claim is rejected as in claim 1. Ngo-Balakrishnan further discloses adding said bandwidth contribution to a target capacity counter corresponding to said target trunk resulting in a target capacity; transmitting an alert in response to said target capacity exceeding a target threshold corresponding to said target trunk (Balakrishnan, fig. 4, step 413, is target capacity greater than max aggregate bandwidth, yes will raise a condition or an alert).

16. For claim 3, the claim is rejected as in claim 2. Ngo-Balakrishnan further discloses said target threshold is an alarm threshold (Balakrishnan, [0081] line 15, maximum limit for aggregate j).

17. For claim 4, the claim is rejected as in claim 2. Ngo-Balakrishnan further discloses said target threshold is a cut-off threshold (Balakrishnan, [0081] line 15, maximum limit for aggregate j).

18. For claim 5, the claim is rejected as in claim 2. Ngo-Balakrishnan further discloses updating said target capacity counter with said target capacity and adding said target access port to said VLAN in response to said target capacity not exceeding said target threshold (Balakrishnan, [0039], [0040], allocate bandwidth if sum of aggregate bandwidth does not exceed maximum aggregate bandwidth of the trunk).

19. For claim 6, the claim is rejected as in claim 2. Ngo-Balakrishnan further discloses said target threshold varies based on said target class of service (Balakrishnan, page 6, tables on priority levels of flows and VLAN).

20. For claim 7, the claim is rejected as in claim 2. Ngo-Balakrishnan further discloses said target capacity varies based on said target class of service (Balakrishnan, page 6, tables on priority levels of flows and VLAN).

21. For claims 8, 9, and 10, the claim is rejected as in claim 1. Ngo-Balakrishnan further discloses said target class of service is best effort, committed bandwidth, or priority plus (Balakrishnan, page 6 table 1, priority levels from lowest to highest).

22. For claim 16, the claim is rejected for the same rationale as in claim 1. Ngo-Balakrishnan further discloses a system for providing Ethernet VLAN capacity requirement estimation, the system comprising:

a network; a storage device in communication with said network, wherein said storage device includes a VLAN database; a user system in communication with said network (Balakrishnan, [0005], world wide web with VLAN users); and a host system in communication with said network (Balakrishnan, [0028], administrator hosts).

23. For claims 17 and 18, the claim is rejected as in claim 16. Ngo-Balakrishnan further discloses said network is the Internet or an intranet (Balakrishnan, [0005], internet has VLANs as intranets).

24. For claim 19, the claim is rejected as in claim 16. Ngo-Balakrishnan further discloses said VLAN database is a relational database (Balakrishnan, page 6, table 2 is read as a VLAN relational database).

25. For claim 20, the claim is rejected for the same rationale as in claim 1.

Conclusion

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

/Kenny S Lin/
Primary Examiner, Art Unit 2452